CONTROLS

AQUACULTURE FACILITY
WITH CASCADE GREENHOUSE

CONTROLS

VENTILATION

The ventilation controls were checked by adjusting the set points of the controlling thermostat to simulate the vent mode of operation. The vent louvers operate as they were designed to. The vent fans come on as they were designed to.

AQUACULTURE POND TEMPERATURE CONTROL

The motorized temperature control valves that were originally installed would not close completely off. This allowed heating water to continue to flow into the aquaculture ponds.

The above motorized valves were changed out to a Solenoid type valve. Those valves also leaked through. Balancing valves were added to the down stream piping to try to correct his problem by adding back pressure to the Solenoid valve. Mr. Kennen Smith is continually checking the Solonoid valves to see if the Solonoid valves are maintaining closed position when heating water is not required.

Aquaculture pond temperatures are controlled as required by thermostat settings with the exception of the month of December, 1983 when the ambient temperatures were below normal and remained that way for a long period of time.

When pond temperatures could not be maintained in December the piping was changed to the plate heat exchanger and boiler. The plate heat exchanger has been piped so it can manually be put in series with the boiler. When operating in this mode in December 1983 and January 1984 the heating water entering the aquaculture ponds was being maintained between 116.6°F and 128.3°F. The fluctuating temperature was caused by the differential setting of the boiler water temperature controller.

TEMPERATURE RECORDERS

The temperature recorders were calculated by using a Keithley 871 Digital Thermometer. The thermometer set points were checked several times and were maintaining their calibration points.

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APPENDIX E

NTIS PRICE CODES

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* Reconstructed by
Navarro College

DOMESTIC PRICE CODES

Standard Priced Documents (Schedule A)

Effective January 1, 1983

Prices are for customers in the United States, Canada, and Mexico.

Code	Price**	Page Range
A01	$ 4.50	Microfiche
A02	7.00	001 - 125
A03	8.50	026 - 050
A04	10.00	051 - 075
A05	11.50	076 - 100
A06	13.00	101 - 125
A07	14.50	126 - 150
A08	16.00	151 - 175
A09	17.50	176 - 200
A10	19.00	201 - 225
A11	20.50	226 - 250
A12	22.00	251 - 275
A13	23.50	276 - 300
A14	25.00	301 - 325
A15	26.50	326 - 350
A16	28.00	351 - 375
A17	29.50	376 - 400
A18	31.00	401 - 425
A19	32.50	426 - 450
A20	34.00	451 - 475
A21	35.50	476 - 500
A22	37.00	501 - 525
A23	38.50	526 - 550
A24	40.00	551 - 575
A25	41.50	576 - 600

For documents over 600 pages, Contact NTIS for a price quote.

A99--Contact NTIS for a price quote.

** Prices are revised periodically, please use price code i.e. A02 for 25 pages

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APPENDIX C
1948 NATATORIUM WATER WELL REPORT

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Kwb Field No. _____ State Well No. 33-61-102

Owner's Well No. 5 County _____

1. Location: ___ 1/4, ___ 1/4 Sec. ___, Block ___ Survey ___

2. Owner: City of Corsicana Address: ___

Tenant: ___ Address: ___

Driller: H. G. Johnson Address: ___

3. Elevation of LS is 418 ft. above msl, determined by TOPO

4. Drilled: 1895 ~~19~~ ; Dug, Cable Tool, Rotary, ___

5. Depth: Rept. 2515 ft. Meas. ___ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ___

7. Pump: Mfgr. ___ Type ___

No. Stages ___, Bowls Diam. ___ in., Setting ___ ft.

Column Diam. ___ in., Length Tailpipe ___ ft. NONE

8. Motor: Fuel ___ Make & Model ___ HP. ___

9. Yield: Flow ___ gpm, Pump ___ gpm, Meas., Rept., Est. ___

10. Performance Test: Date ___ Length of Test ___ Made by ___

Static Level ___ ft. Pumping Level ___ ft. Drawdown ___ ft.

Production ___ gpm Specific Capacity ___ gpm/ft.

CASING & BLANK PIPE

Cemented From ___ ft. to ___ ft.

Diam. (in.)	Type	Setting, ft. from	to
10			

11. Water Level: 82 ft. (rept.) meas. 5-19 1938 above below which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below which is ___ ft. above below surface.

___ ft. rept. meas. ___ 19__ above below which is ___ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, (Not Used) destroyed about 1948

13. Quality: (Remarks on taste, odor, color, etc.) ___

Temp. — °F, Date sampled for analysis 5-1-38 Laboratory USGS

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

Temp. ___ °F, Date sampled for analysis ___ Laboratory ___

14. Other data available as circled: (Driller's Log,) Radioactivity Log, Electric Log, Formation Samples, Pumping Test, ___

15. Record by: ___ Date ___ 19__

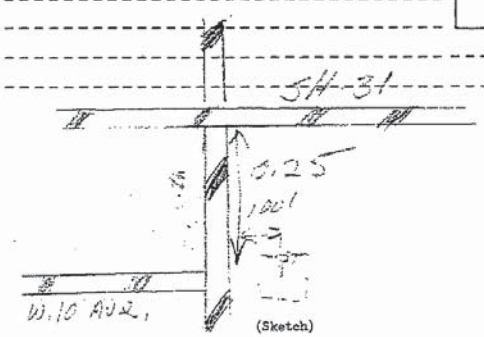
Source of Data ___

16. Remarks: ___

WELL SCREEN

Screen Openings ___

Diam. (in.)	Type	Setting, ft. from	to



(Sketch)

TWDBE-WD-2

Well TY-33-61-102

Owner: City of Corsicana Well #2 Driller: H. G. Johnson

Sandy marl and clay----	1,050	1,050	Water-bearing sand----	60	2,460
Marl and clay----------	500	1,550	Blue clay----------	27	2,487
Chalky blue and white limestone----------	430	1,980	Sand----------	8	2,495
Blue-black shale-------	420	2,400	Shale----------	20	2,515

WRD Exp. (GW)
April 1966

Well: TY-33-61-102

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR — GEOLOGICAL SURVEY — WATER RESOURCES DIVISION

MASTER CARD

Record by: G. Thompson — Source of data: obs — Date: 7/18/68 — Map: Corsicana

State: Tex. — 49 — County (or town): Navarro — TY

Latitude: 32 05 21 N (deg, min, sec) — Longitude: 096 27 47 (degrees, min, sec) — Sequential number: 1

Lat-long accuracy: ___ T. ___ N S, R ___ W, Sec ___, ___ ¼, ___ ¼, ___ ¼

Local well number: TY-33-61-102 — Other number: Well #5 (B & M)

Local use: NATATORIUM-DEST — Owner or name: City of Corsicana

Owner or name: ___ — Address: ___

Ownership: (C) County, (F) Fed Gov't, (M) City, (N) Corp or Co, (P) Private, (S) State Agency, (W) Water Dist

Use of water: (A) Air cond, (B) Bottling, (C) Comm, (D) Dewater, (E) Power, (F) Fire, (H) Dom, (I) Irr, (M) Med, (N) Ind, (P) P S, (R) Rec, (S) Stock, (T) Instit, (U) Unused, (V) Repressure, (W) Recharge, (X) Desal-P S, (Y) Desal-other, (Z) Other

Use of well: (A) Anode, (D) Drain, (G) Seismic, (H) Heat Res, (Φ) Obs, (P) Oil-gas, (R) Recharge, (T) Test, (U) Unused, (W) Withdraw, (X) Waste, (Z) Destroyed

DATA AVAILABLE: Well data ___ Freq. W/L meas.: ___ Field aquifer char. ___

Hyd. lab. data: ___

Qual. water data; type: Partial: 5/1/38

Freq. sampling: ___ Pumpage inventory: yes no, period: ___

Aperture cards: ___ yes

Log data: Drill log in file

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD — Depth well: ~~2477~~ 2515 ft — Meas. rept. Tech. files — accuracy

Depth cased: (first perf.) ___ ft — Casing type: Steel; Diam. 10 in

Finish: (C) porous concrete, (F) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, (Φ) open end, (P) perf., (S) screen, (T) sd. pt., (W) shored, (X) open hole, (Z) other

Method Drilled: (A) air rot, (B) bored, (C) cable, (D) dug, (H) hyd rot., (J) jetted, (P) air percussion, (R) reverse rotary, (T) trenching, (V) driven, (W) drive wash, (Z) other

Date Drilled: 1895 — Pump intake setting: ___ ft

Driller: ___ name, ___ address

Lift (type): (A) air, (B) bucket, (C) cent, (J) jet, (L) multiple (cent.), (M) multiple (turb.), (N) none, (P) piston, (R) rot, (S) submerg, (T) turb, (Z) other — Deep Shallow

Power (type): diesel, elec, nat gas, gasoline, hand, LP gas, wind; H.P. ___ — Trans. or meter no. ___

Descrip. MP: Base of Pump 1.0 ft above/below LSD. Alt. MP: ___

Alt. LSD: 428 — Accuracy (source): Meas. from B.M.

Water Level: 82 ft above/below MP; Ft above/below LSD: 82 — Accuracy: W. O. George

Date meas.: 5/19/38 — Yield: ___ gpm — Method determined: ___

Drawdown: ___ ft — Accuracy: ___ — Pumping period: ___ hrs

QUALITY OF WATER DATA: Iron .12 ppm — Sulfate 153 ppm — Chloride 1790 ppm — Hard. 55 ppm

Sp. Conduct ___ K x 10^6 — Temp. 120 °F — Date sampled 5/1/38

Taste, color, etc.

Well No. TY-33-61-102

* destroyed about 20 yrs ago (about ...

Well No. TY-3-61-102

Latitude-longitude N/S d m s d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD (1, 19) Physiographic Province: (20, 21) Section:

(22) Drainage Basin: (23, 25) Subbasin: (26)

Topo of well site: (D) depression, (C) stream channel, (E) dunes, (F) flat, (H) hilltop, (K) sink, (L) swamp, (Ø) offshore, (P) pediment, (S) hillside, (T) terrace, (U) undulating, (V) valley flat (27)

MAJOR AQUIFER: system, series (28, 29) Washington ? aquifer, formation, group (30, 31)

Lithology: (32, 33) Origin: (34) Aquifer Thickness: ft

(35, 37) Length of well open to: ft (38, 40) Depth to top of: ft (41, 43)

MINOR AQUIFER: system, series (44, 45) aquifer, formation, group (46, 47)

Lithology: (48, 49) Origin: (50) Aquifer Thickness: ft

(51, 53) Length of well open to: ft (54, 56) Depth to top of: ft (57, 59)

Intervals Screened:

Depth to consolidated rock: ft (60, 63) Source of data: (64)

Depth to basement: ft (65, 68) Source of data: (69)

Surficial material: (70, 71) Infiltration characteristics: (72)

Coefficient Trans: gpd/ft (73, 75) Coefficient Storage: (76, 78)

Coefficient Perm: gpd/ft^2; Spec cap: gpm/ft; Number of geologic cards: (79)

Was used to fill Swimming Pool at Natatorium until about 20 or 25 yrs ago when ~~well~~ Natatorium was Closed and well was plugged with cement. Casing still protrudes ~~from~~ above land surface.

Well No.

GPO 857-700

T1-33-61-102

9-260
(January, 1927)

K-100

T1-33-61-102

UNITED STATES GEOLOGICAL SURVEY, WATER RESOURCES BRANCH

ANALYTICAL STATEMENT Navarro Co.

Location Corsicana, Texas

Source Well 2447' deep (at Natatorium)

WBF: Woodbine?

"Hot well" considered for a commercial helth resort.

Well #5

KEY PUNCHED

Chemist E.W. Lohr

Lab No. 192

Use

Color

Turbidity

Alkalinity

Hardness (calc.) 55

Ignition loss

Suspended matter

Total dissolved solids

Remarks Coll. by E.O. George

(Field No. 501)

(Same sample as WRA Lab. No. 14782)

(Check analy.)

Date May 1, 38

SiO_2

Fe 12

Ca 15

Mg 5.4

Na 1808 calc

K 1810

CO_3 0

HCO_3 1580

SO_4 153

Cl 1700

NO_3 <.02

F 2.5

Sum 4550

9—2740 ORIGINAL RECORD

(6 Year)

KEY PUN

rCa	.6489
rMg	.4441
rNa	1.0930
rK	
rCO_3	
$rHCO_3$	25.8982
rSO_4	3.1854
rCl	50.4837
rNO_3	
rF	.1316
	79.6989

79.6989
1.0930
78.6059 x 23 = 1808Na.

% na = 99

Computations by E. W. Lohr 6-17-38
Checked by H. T. Davidson 6-18-38
Project Texas G.W.
Author
Transmitted
Remarks

6—7749

U. S. GOVERNMENT PRINTING OFFICE: 1938

(over)

APPENDIX D
WDW-394 GEOPHYSICAL LOG